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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,131	07/24/2003	Yoshio Sasaki	B-5162 621098-8	3878

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EXAMINER	
GUPTA, PARUL H	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,131	SASAKI ET AL.	
	Examiner	Art Unit	
	Parul Gupta	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/7/06*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6, and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :7/24/03, 1/13/04, 3/4/04, and 3/14/05.

DETAILED ACTION

1. Claims 1-4, 6, and 7 are pending for examination as interpreted by the examiner. The amendment and arguments filed on 8/7/06 was considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa in view of Furukawa, US Patent 6,643,230.

Regarding claim 1, Yanagawa teaches a spherical aberration correcting apparatus comprising: a recording unit (figure 1) configured to record a piece of information through radiation of an optical beam onto an optical disk (radiation done by element 21 of figure 3); a reflected-light level detecting unit configured to detect a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information (element 32 of figure 4); a correction amount deciding unit ("system control circuit" of element 6 in figure 2) configured to decide a correction amount for spherical aberration on the basis of the level of the reflected-light (explained as the "current operating status of the disc player" in paragraph 0035); and a spherical aberration correcting unit ("servo control circuit" of element 5 in figure 2) configured to correct the spherical aberration (by moving the collimator lens of element 22 in figure 3) by using the correction amount, wherein the reflected-light level detecting unit (element

32 of figure 4) comprises: a detecting element configured to detect a pit level of the optical beam under the recording operation level ("output signal of a level corresponding to an amount of received light" of lines 5-6 of paragraph 0021) and at least one of a read level and a write level (inherent in a recording pulse); and a calculation element ("head amplifier" of element 3 of figure 2, further described in paragraph 0026).

Yanagawa does not but Furukawa teaches the device configured to calculate a pit ratio indicating a ratio between the pit level (a similar method of gaining the "residual error value" is explained in the given section) and one of the read level, the write level, and a recording power (a similar method of gaining the "amplitude width value of the disturbance signal" is explained in the given section) and to output the pit ratio as a signal indicative of the level of the reflected-light (column 3, line 60-column 4, line 25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the correction amount deciding unit of Furukawa into the apparatus of Yanagawa. This would create accurate reading of information even if spherical aberration were generated by the thickness error in the transparent substrate of an optical disk (column 1, lines 31-35 of Furukawa).

Regarding claim 2, Yanagawa does not but Furukawa teaches the spherical aberration correcting apparatus, wherein the correction amount deciding unit comprises: a determining element configured to determine whether or not the spherical aberration obtained after the aberration correction has been improved, by mutually comparing both levels of the reflected light obtained before and after the aberration correction carried

out by the spherical aberration correcting unit (column 5, line 66-column 6, line 13); a first processing element ("controller" of element 50 in figure 4) configured to update the correction amount by changing the correction amount in a direction of either the same positive or negative polarity as the polarity used for deciding the correction amount last time (column 5, lines 11-14 explains that a new correction amount is added to the pre-existing correction amount), the spherical aberration being subject to changes in the direction of either the positive or negative polarity, in cases where it is determined by the determining unit that the spherical amount has been improved; and a second processing element configured to delete the correction amount currently set but decided last time, in cases where it is determined by the determining element that the spherical amount has not to be improved (column 5, lines 41-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the correction amount deciding unit of Furukawa into the apparatus of Yanagawa. This would create accurate reading of information even if spherical aberration were generated by the thickness error in the transparent substrate of an optical disk (column 1, lines 31-35 of Furukawa).

Regarding claim 3, Yanagawa does not but Furukawa teaches the spherical aberration correcting apparatus according to claim 2, wherein the correction amount deciding unit further comprises a third processing element (same functions performed by "controller" of element 50 in figure 4) configured to update the correction amount by changing the correction amount in a direction of either the positive or negative polarity

that is opposite to the polarity used for deciding the correction amount last time, in cases where it is determined by the determining unit that the spherical amount has not to be improved. The mere statement of a predetermined value being added suggests that polarity is not preset in the invention of Furukawa.

Regarding claim 4, Yanagawa teaches the spherical aberration correcting apparatus according to claim 1, wherein the reflected-light level detecting unit (element 32 of figure 4) is configured to output a pit level ("output signal of a level corresponding to an amount of received light" of lines 5-6) of the optical beam under the recording operation as a signal indicative of the level of the reflected-light (paragraph 0021).

Regarding claim 6, Yanagawa teaches the spherical aberration correcting apparatus according to claim 1, further comprising a controlling unit ("system control circuit" of element 6 in figure 2) configured to enable the reflected-light level detecting unit (element 32 of figure 4), the correction amount deciding unit ("system control circuit" of element 6 in figure 2), and the spherical aberration correcting unit ("servo control circuit" of element 5 in figure 2) to perform the correction for the spherical aberration in response to a start of the recording operation (paragraphs 0032 and 0037-0038).

Regarding claim 7, Yanagawa teaches a spherical aberration correcting method comprising the steps of: recording a piece of information through radiation of an optical beam onto an optical disk (paragraph 0020); detecting a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information (paragraph 0021); deciding a correction amount for spherical aberration on

the basis of the level of the reflected-light (paragraph 0039); and correcting the spherical aberration by using the correction amount (paragraph 0039), wherein the recording step is continued until the recording operation for the information is instructed to stop, during which time the light level detecting step (explained in paragraph 0022), the correction amount deciding amount, and the spherical aberration correcting step are repeatedly performed in sequence (shown in figure 8 and explained in paragraph 0039). The movement of the collimator lens is used as the method of correction for spherical aberration. Yanagawa also teaches the spherical aberration correcting method wherein the step of detecting a level of light (paragraph 0021) comprises the steps of: detecting a pit level of the optical beam under the recording operation (paragraph 0021) and at least one of a read level and a write level (different output levels). Yanagawa does not Furukawa teaches calculating a pit ratio indicating a ratio between the pit level and one of the read level, the write level, and a recording power and to output the pit ratio as a signal indicative of the level of the reflected-light (column 3, line 34 to column 4, line 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the correction amount deciding unit of Furukawa into the apparatus of Yanagawa. This would create accurate reading of information even if spherical aberration were generated by the thickness error in the transparent substrate of an optical disk (column 1, lines 31-35 of Furukawa).

Response to Arguments

3. Applicant's arguments filed 8/7/06 have been fully considered but they are not persuasive. Applicant recites that Yanagawa in view of Yamanaka and further in view of

Furukawa does not teach "a calculation element configured to calculate a pit ratio indicating a ratio between the pit level and one of the read level, the write level, and a recording power to output the pit ratio as a signal indicative of the level of the reflected light" because Furukawa uses different values such as the "residual error value" and "amplitude width value of the disturbance signal: instead of a read level, write level, and a recording power. Thus, the method does not use the same elements and makes it impossible to obtain the tracking error signal if Furukawa does not cross any tracks. Although Furukawa has different values used, the method of detecting the ratio of the values as a signal indicative of the level of the reflected-light is the same as applicant. Yanagawa teaches all other elements of using the pit level to calculate the level of reflected-light. Thus, since only the method of Furukawa is being considered, it would be obvious to one of ordinary skill in the art at the time of the invention to combine the two references. Although both inventions are directed towards the same purpose (making them analogous art), Furukawa explains why his method yields more accurate results (column 6, lines 57-63) than other methods. Thus, incorporating the methods of Furukawa in Yanagawa is advantageous and is not merely hindsight.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PHG
10/17/06

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER